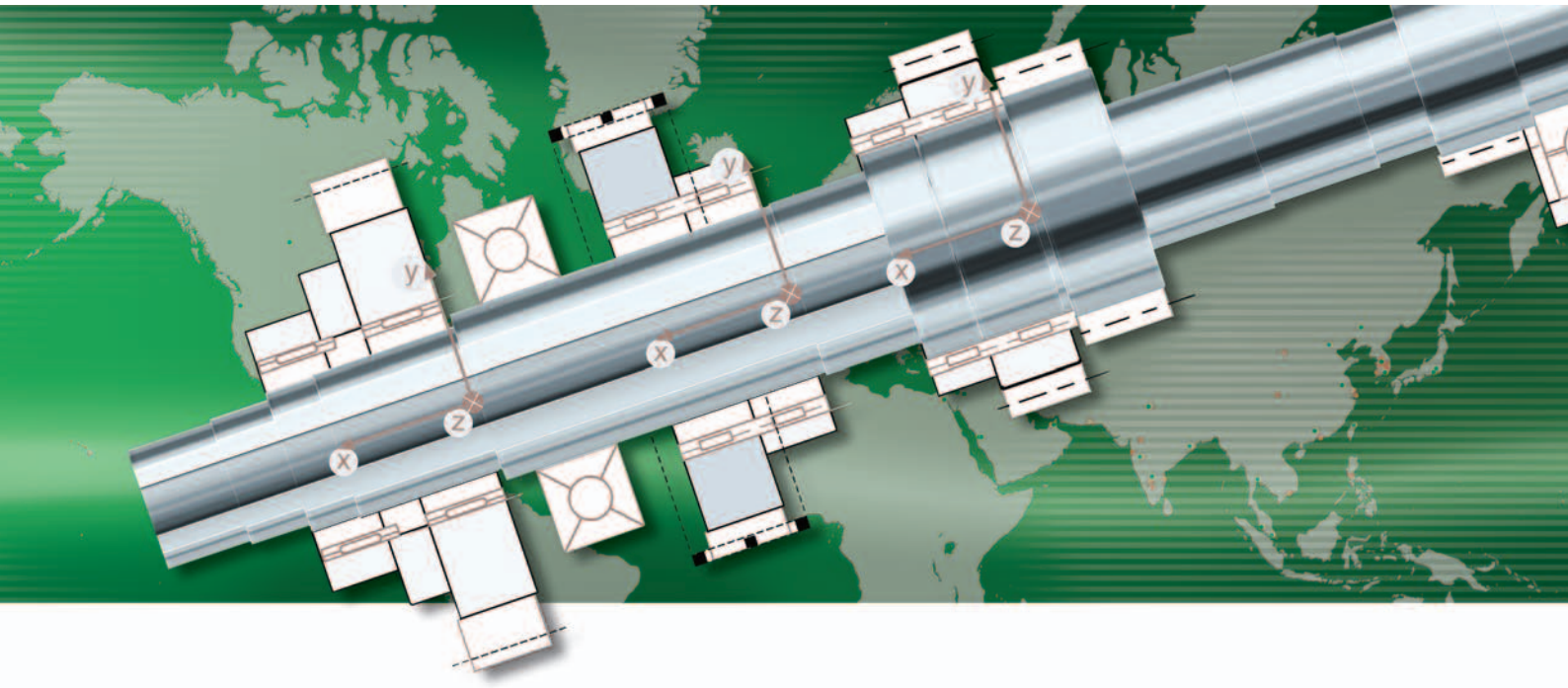
SCHAEFFLER



BEARINX®-online
Shaft Calculation

LUK INA FAG

BEARINX®
Efficient Calculation Software by Schaeffler

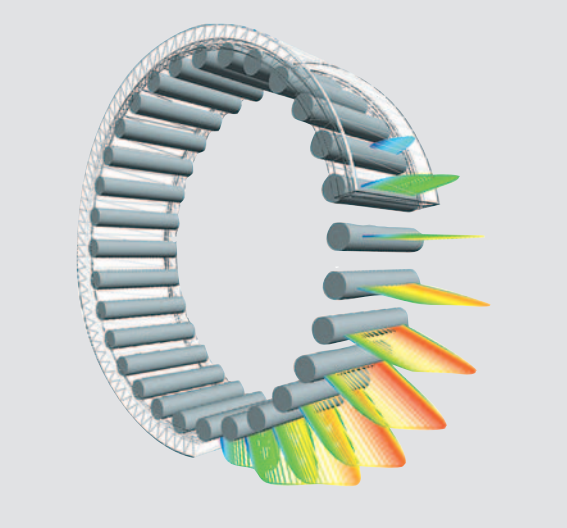
Along with developing and manufacturing top quality precision parts, great service is an important tradition at Schaeffler. We offer you the support you need as early as the design phase, so you can put our products into operation with confidence, because for us, service means a partnership with the customer from the first design idea right up to supplying the product.

Rolling bearing design is one of the focal points of design support. We want to give you a competitive edge by supplying you with perfectly designed products. We have already been using calculation programs successfully for 50 years to meet these requirements.

BEARINX® software is one of the leading programs for performing rolling bearing calculations. The software allows rolling bearing supports to be analyzed in detail – from single bearings via complex shaft or linear guidance systems to entire gear systems. All calculations are performed in a consistent calculation model. Even for complex gears, the contact pressure on each rolling element is considered in the calculation.

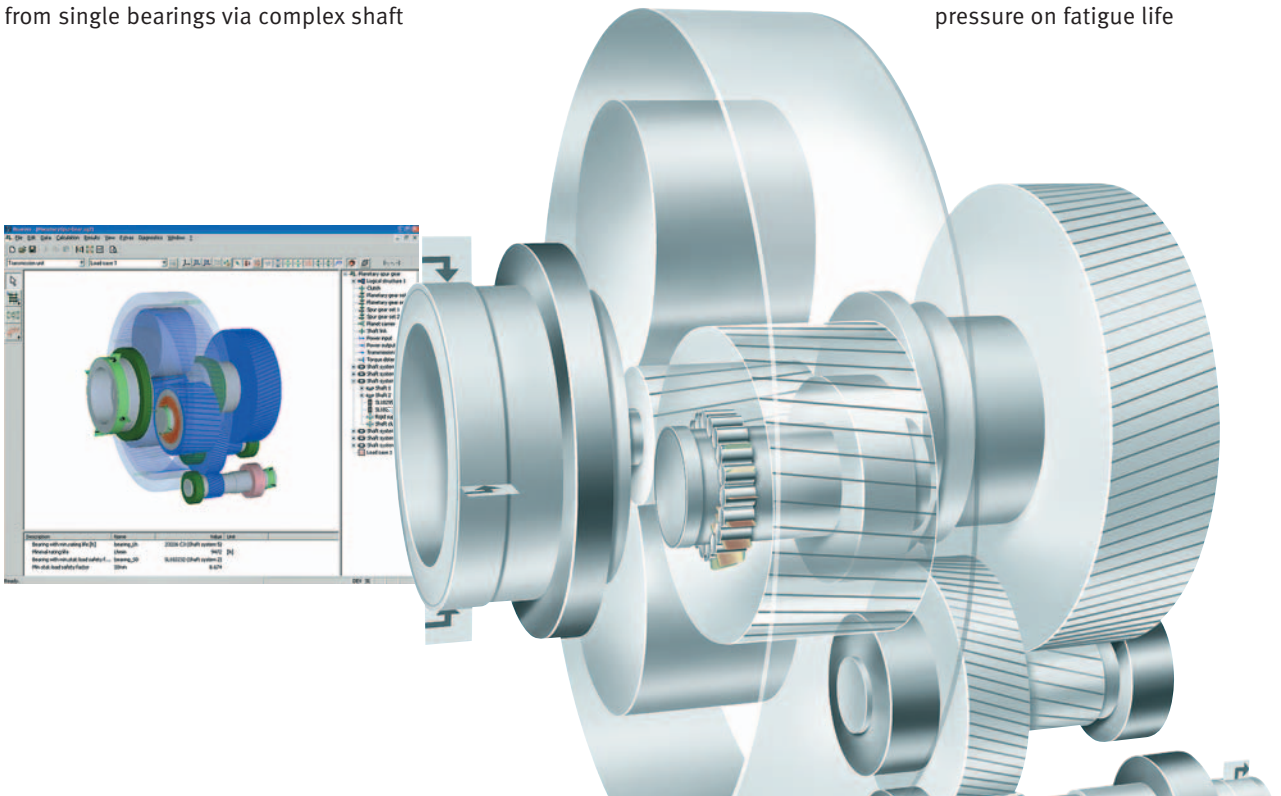
Amongst other things, BEARINX® takes the following into consideration:

- Non-linear elastic deflection behavior of bearings
- Elasticity of shafts and housings
- The influence of fit, temperature and speed on bearing operating clearance or preload and on contact angle
- Roller and raceway profiles as well as raceway osculation
- Load-related contact-angle shifts in the case of ball bearings



Accurate in every detail: Even the contact pressure on every single rolling element is included in the calculation

- Actual contact pressure when a tilted position and rolling element profiles are considered
- Effects of lubrication conditions, contamination and actual contact pressure on fatigue life



Shaft Calculation Online.
Cut your development time!

Other calculation tools currently on the market usually make use of highly simplified calculation methods. In many cases, the tilted position of bearings resulting from shaft deflection and the differing deflection behavior that is present in various bearing designs are ignored. The internal load distribution in the bearing – decisive for fatigue life – is usually determined by approximation methods.

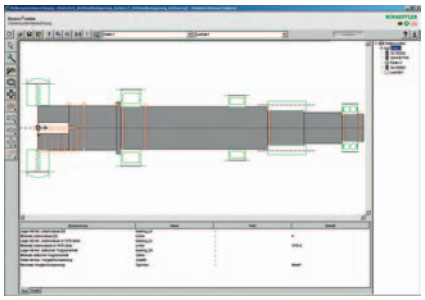
With our software you can now determine actual stresses while taking shaft deflection and rolling bearing deflection behavior into account. And of course, exact calculations for the internal load distribution in the bearing are performed, including contact pressure with the actual rolling element profile.

The algorithms used in BEARINX®-online Shaft Calculation are identical to the ones used in BEARINX® at Schaeffler. BEARINX®-online Shaft Calculation allows you to perform calculations at your desk for single-shaft systems incorporating several bearings. A Java-based user interface provides support for easy data entry. Graphic representations allow you to visualize your design and check the data easily.

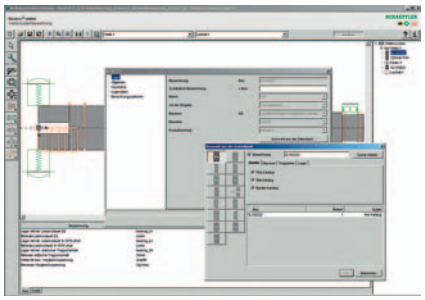
The data and geometry for bearings in our catalogs can be easily accessed from an integrated database. Powerful calculation servers at Schaeffler then perform the actual calculation.

The input files you create in BEARINX®-online Shaft Calculation are compatible with BEARINX®. This facilitates any further communication with our engineers and prevents duplicate work.

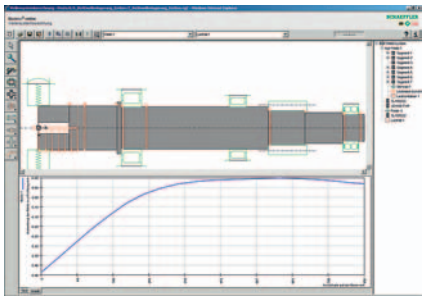
Not everything can be done online: Complex problems can be dealt with effectively in face-to-face meetings



User-friendly interface



Rolling bearings from the integrated database

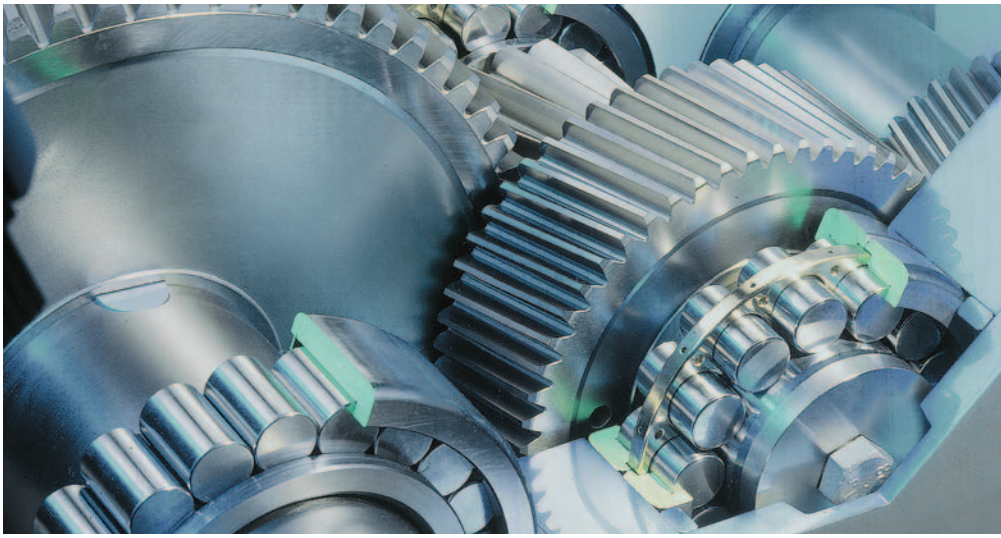


Graphic representation of the shaft reaction

The comprehensive results as well as the graphic representation of shaft reactions and bearing internal load distribution make it easier for you to analyze your design variants. An online tutorial and a detailed help system make it easier for you to use the full potential of BEARINX®-online Shaft Calculation.

ISO/TS 16281 defines the standardized calculation of fatigue life using state-of-the-art computer-assisted calculation procedures. This procedure is of course available to you in BEARINX®-online.

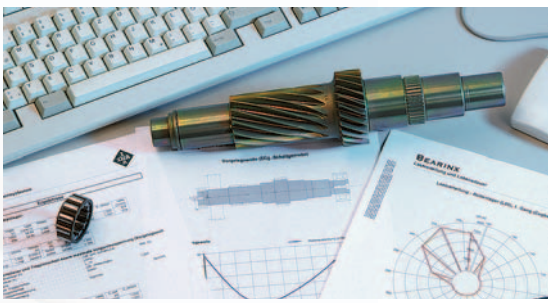
BEARINX®-online Shaft Calculation was not developed to move support and calculation services away from Schaeffler and transfer them to the customer. On the contrary, since we would like to work even more closely with you. Our objective is to allow you to make a suitable preliminary selection of rolling bearings early on in the design phase so that you can reduce your development times.



Powerful: The calculation software can analyze complex gear system designs

BEARINX®-online Shaft Calculation – an overview

- Calculation of bearing stiffness at the operating point taking all relevant influences into account
- Graphic representation of shaft reactions (shaft deflection and inclination)
- Rigid and elastic arrangement of bearings in the shaft system
- Calculation of fatigue life according to ISO/TS 16281
- Simple modeling of the shaft system by integrated assistants



Clearly documented calculation results enable the user to control quality

BEARINX®-online
... available for you, too

Ever decreasing development times and product cycles put mechanical engineers and their suppliers under pressure. The only way to obtain the required competitive edge is by reacting fast and employing the proper expertise. With Schaeffler you have found the perfect partner to achieve this.

This is why we give our customers the opportunity to try the outstanding features of BEARINX® themselves. With BEARINX®-online Shaft Calculation you now have access to the newly-integrated module in BEARINX® for designing shaft systems.

BEARINX®-online Shaft Calculation allows calculations to be performed for complex elastic shaft systems. We offer training to familiarize you with the program and help you better understand the calculation models used. You'll learn how to work with the user interface and how to interpret calculation results correctly.

The conditions for using the software as well as making use of any additional services such as training programs and support are defined in a mutual contract. Fees are charged for both the training program and the registration to use BEARINX®-online.

System requirements

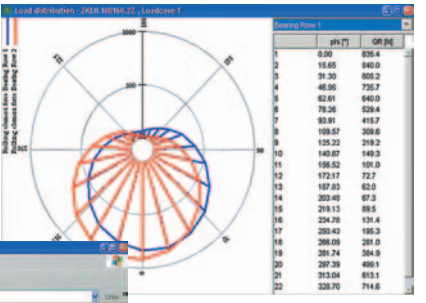
The actual calculations are performed by powerful servers at Schaeffler. The only thing that the local hardware does is operate the user interface. This means that the requirements for your local hardware are low.

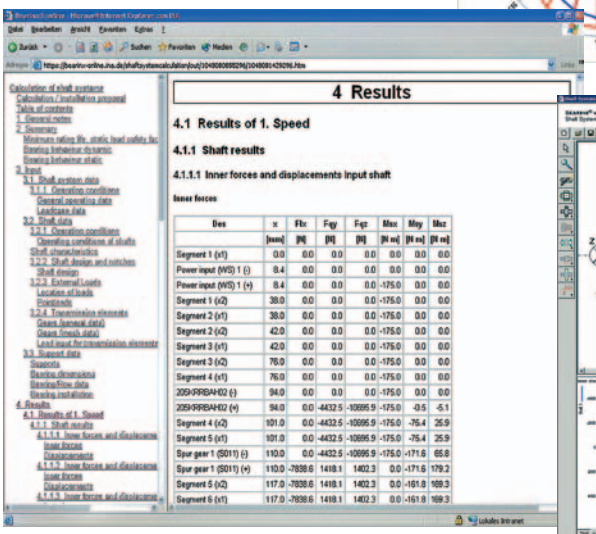
Hardware

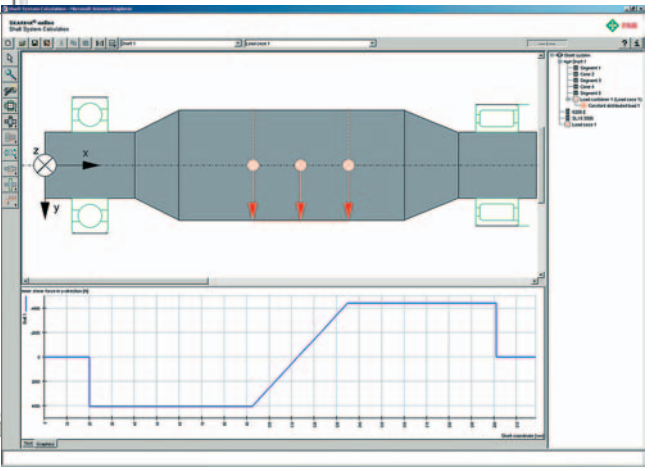
- Processor: 500 MHz or better
- RAM: at least 256 MB (512 MB are recommended)
- Monitor resolution: 1024 × 768 or better
- 80 MB available hard drive space
- Internet hookup via ISDN (DSL is recommended)

Software

- Java 2 runtime environment
- Java plug-in compatible browser
- Flash Player







Convenient documentation of results

Registration: BEARINX®-online Shaft Calculation

The calculation program BEARINX®-online Shaft Calculation is available online only.
The access is regulated by contract. At the beginning there is a training course of one day and a non-recurrent fee for the introduction. For universities the program use is free of charge.
www.schaeffler.com → Products & Services → INA/FAG Products → Calculation

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